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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,354	12/27/2000	Stuart I. Hodge JR.	786-009917-US (PAR)	5467
2512	7590	10/23/2003	EXAMINER	
PERMAN & GREEN 425 POST ROAD FAIRFIELD, CT 06824			LAXTON, GARY L	
			ART UNIT	PAPER NUMBER
			2838	
DATE MAILED: 10/23/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/749,354

Applicant(s)

HODGE, STUART I.

Examiner

Gary L. Laxton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-111 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 15-22 is/are rejected.
- 7) ☒ Claim(s) 9-11, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Prosecution Reopened

1. In view of the appeal brief filed on 7/25/03, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the gate driver that comprises a power amplifier of claim 6 including the limitations of claim 1; the floating power supply of claim 22 including the limitations of claim 19, claim 18 and claim 15 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

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A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings and the specification appear to be silent regarding a gate driver circuit with a power amplifier or a floating power supply.

Claim Objections

3. Claims 15-22 are objected to because of the following informalities:

Claim 15 line 5, it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138. Appropriate correction is required. Claims 16-22 inherit the same from claim 15.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 7 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Katyl et al.

Claims 1 and 7, Katyl et al disclose an active power factor correction circuit (figure 2) having a controller (26), resistor and capacitor of figure 2; i.e. controls power on/off function of 14 and

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controls circuit 27) and an inrush current control circuit (27) with a switch (34 of figure 3c) having a control element coupled to a control output of the controller; see figures 2 and 3c (27 and 70) and Col. 4 lines 53-55. Furthermore, the inrush circuit comprises at least one passive device (30).

Claim 15, Katyl et al disclose passive device (30) of figure 3c; controller (26', resistor and capacitor of figure 2; i.e. controls power on/off function of 14 and controls circuit 27); power factor correction circuit (14, 17); an active current limiting device (34 of figure 3c) connectable in parallel with passive device (30).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katyl et al in view of Cambier.

Katyl et al disclose the claimed invention with regard to claims 1 and 15 supra, except for wherein the inrush current control circuit comprises an IGBT.

Cambier teaches that using an IGBT in place of a MOSFET has several advantages. Namely, an IGBT permits higher current for a particular junction temperature. Furthermore, the IGBT has a higher forward voltage thus permitting a higher current load capacity. The two factors combine to permit the IGBT to overall higher current load capacity.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the circuit of Katyl et al with an IGBT in place of the MOSFET in order to permit higher current load capacity as suggested by Cambier (col. 5 lines 64-67; col. 6 lines 3-8).

8. Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katyl et al in view of Sutanto.

Katyl et al disclose the claimed invention with regard to claims 1 and 15 supra, except for using a UC3854 controller.

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Sutanto teaches that the UC3854 controller is a well known and popular power factor controller that aids novel converters with low current and voltage stresses with simple control loops to achieve near unity power factor.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made for Katyl et al to choose a UC3854 controller in order to provide a novel converter with a simple control loop to achieve near unity power factor aided by the controller UC3854 for providing the unity power factor as taught by Sutanto.

9. Claims 4, 5 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katyl et al in view of Goel.

Katyl et al disclose the claimed subject matter in regards to claim 1 supra, except for a gate driver circuit and the gate driver circuit comprising a charge pump.

Goel teach the advantages of using a gate driver to drive a MOSFET switch and added advantages of a gate driver circuit using a charge pump (also considered a high voltage driver IC) for rapidly turning the MOSFET on in the power converter circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the circuit of Katyl et al to include a driver circuit and the driver circuit comprising a charge pump for rapidly turning a MOSFET switch on by driving the gate with a rapid responding gate driver circuit as taught by Goel.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katyl et al in view of Esser et al.

Katyl et al disclose the claimed subject matter in regards to claim 1 supra, except for a gate driver circuit and the gate driver circuit comprising an amplifier.

Esser et al teach a gate driver with an amplifier for amplifying a coupled power command signal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the circuit of Katyl et al to include a driver circuit and the driver circuit comprising an amplifier for amplifying a power command signal or a driving signal in order to produce a signal properly amplified for driving a switch as taught by Esser et al.

11. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katyl et al in view of Bernstein.

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Claim 8, Katyl et al disclose the claimed invention with regard to claims 7 and 15, supra except for the at least one passive current limiting device comprises a positive temperature coefficient (PTC) resistor.

Bernstein et al teach the benefits of actively controlling inrush current by shunting current around a passive device and through an active device by utilizing an IGBT to actively control the inrush current. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the inrush circuit of Katyl et al to include the passive current limiting PTC apparatus of Bernstein et al for controlling inrush current in the circuit of Katyl et al in order to keep a temperature sensitive thermistor in a cold state in order to maintain high resistance to effectively and efficiently control inrush current as taught by Bernstein et al.

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katyl et al in view of Rinehart et al.

Claim 22, Katyl et al disclose the claimed invention with regard to claims 19, 18 and 15, supra except for the gate driver circuit comprises a floating power supply.

Rinehart et al teach an isolated gate driver circuit using a floating power supply in order to bias the driver circuit (col. 8 line 22).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the gate driver circuit of Katyl et al to include a floating power supply in order to bias the driver circuit as taught by Rinehart et al.

Allowable Subject Matter

13. Claims 9-11, 13 and 14 are allowed.

14. The following is a statement of reasons for the indication of allowable subject matter:

Claims 9-11, 13 and 14, prior art fails to disclose or suggest, inter alia, passively controlling inrush current with a passive device for a predetermined amount of time; generating a power factor control signal; and implementing the power factor control signal to actively control the inrush current, and wherein actively controlling the inrush current shunts output current around the passive device and through an active device.

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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (703) 305-7039. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (703)308-1680. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



MICHAEL SHERRY
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Gary L. Laxton
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GLL